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(54) SURGE PROTECTIVE CIRCUIT

(57) Abstract:

PURPOSE: To protect inner circuit against breakdown by providing a PN junction element having reverse bias withstanding voltage lower than that for a circuit to be protected, and an amplifying element connected to form a current path between power supply terminals on highest and lowest potential sides and receiving a breakdown current, flowing through

the PN junction element, as an amplification control current.

CONSTITUTION: When a positive surge voltage to be applied between power supply terminals 1, 3 exceeds the collector-base withstand voltage of a transistor Q1, a breakdown current flows from the collector to the base of the transistor Q1. The breakdown current serves as the base current of a transistor Q2 to conduct the transistor Q2 and thereby a current, equal to the base current multiplied by a current amplification factor, flows between the collector and emitter of the transistor Q2. Consequently, a surge current can quickly be fed from the power supply terminal 1 toward the power supply terminal 3 by means of the transistor Q2. According to the invention, inner circuit 4 can be protected against breakdown even upon application of a positive surge between the power supply terminals 1, 3.

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